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ABSTRACT

After a 1978 meeting, eight professional education organizations drafted a position statement on the essentials of education. The statement affirmed that the interdependence of skills and content is the central concept of the essentials of education, and that subject disciplines are interdependent. The statement also listed specific essentials of education. An integrated model that could be used to put the essentials of education approach into practice was developed. The model consists of five steps: (1) developing a list of activities for a specific content area, such as art or science; (2) mapping the activity onto a grid that matches content areas with skills that include comprehending, symbol making, communicating, expressing oneself, problem solving, and logical reasoning; (3) developing a teaching schedule for each activity; (4) calculating the amount of time spent on each content area and skill; and (5) developing a planning sheet that takes into consideration teaching strategies, evaluation of activities, and resource materials for each activity. In the Colorado and Arizona schools in which the model has been implemented, teachers have noted positive benefits such as high student motivation and increased student cooperation. Appendixes include a copy of the position statement, a solar system unit activities sheet, a list of subject units developed, and short professional biographies of the model's two developers. (BC)

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THE ESSENTIALS APPROACH:

An Integrated Curriculum Model for Rethinking the Curriculum of the Future

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THE ESSENTIALS APPROACH:

An Integrated Curriculum Model for Rethinking the Curriculum of the Future

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Introduction

Joseph Campbell, the history professor famous for his understanding of mythology, suggests that we are between two worlds. Our "old world" is dissolving around us as witnessed by the changes in the American family structure, our economic system, our value and belief systems. According to Dr. Campbell, we are moving away from one world but "haven't a clue" as to what the next one looks like. The foundations of many traditional ideas, methods and beliefs concerning learning and education are crumbling as brain research enlarges our understanding of the learning process and technological advances test our capacity for change. One of the results of current educational research has been a shift in focus—from the teacher and what is taught—to the student and what is learned. A school curriculum that is teacher-centered, fact-oriented, and textbook-dominated presented in isolated periods of time with no connection among the various subject areas is no longer a realistic curriculum for the future.

We see the "old world" expressed in the characteristics of a traditional, teacher-focused classroom, and the approach of the "new world" reflected in the characteristics of a student-focused classroom:

TEACHER FOCUSED CLASSROOM	STUDENT FOCUSED CLASSROOM
Linear structure programmed sequenced defined and confined	Non-linear structure
Convergent	Divergent
Reductionist	Expansionist
Right Answer	Right Question problem solving process orientation
Separate programs/students/skills	Connections/whole of the experience
Student is passive learner	Student is active learner
Teacher Role: information provider learning director determines priorities provides materials determines scope and sequence of learning responsible for student learning	Teacher Role: facilitator of learning learning guide offers choices helps find materials helps students determine scope and sequence shares responsibility for learning with student

The Essentials Approach: The Need for Change

The Essentials Integrated Curriculum Model is based on the statement. This statement was conceived by educators aware of the transitional nature of the world with the belief that students must be educated to live, work and compete in the 21st Century--a vastly different world from the present one.

The essentials of education position statement came about by the chance meeting of the presidents of five professional education associations—the International Reading Association, the National Council of Teachers of English, the National Council of Teachers of Mathematics, the National Council for the Social Studies and the National Science Teachers Association—during the Conference on Achievement Testing and Basic Skills in Washington, D.C., in 1978. Discussion centered around the "3 R's," but **processes** as well as **content** were determined to be fundamental to a solid educational experience. Following the initial meeting, three additional subject area organizations joined the group—the American Council on the Teaching of Foreign Languages, the Music Educators National Conference, and the National Art Education Association.

A position statement was drafted to counter the simplistic approach of the 3 R's and was submitted to the board of directors of the cooperating associations. Additionally, the Association for Supervision and Curriculum Development obtained a copy and endorsed the position statement. An educator from South America attending an IRA convention asked permission to reproduce the statement in Spanish, and sixty thousand copies were distributed on that continent. A second generation of associations was invited and endorsed the statement. A list of the endorsing associations may be found following the Essentials of Education statement in the Appendix (page 14).

Officials within the Basic Skills Improvement Program of the United States Department of Education became interested in the essentials approach. The Department developed a contract with Dingle Associations, Inc., of Washington, D.C., to examine and explore the impact of the essentials of education upon elementary education. A monograph was developed under this contract, THE ESSENTIALS APPROACH: Rethinking the Curriculum for the 80's. Two additional contracts were granted to study the effect on secondary and adult education.

At the time the elementary monograph was completed, no implementation plans to put the essentials philosophy into actual classroom practice had been developed. Therefore, before the essentials statement could have any impact on education, a model had to be developed to bridge the gap between theory and practice. Dr. John Akey, one of the originators of the position statement and a member of the advisory panel for the monograph, developed a model that integrates educational experiences into the meaningful whole called for by the essentials of education statement.

The term ***integrated curriculum*** has been applied to this model because it goes far beyond a simple interdisciplinary approach by including learning processes as well as traditional content knowledge.

The Essentials Approach:
An Integrated Curriculum Model

The first step in organizing a model is to develop a list of activities for a specific content unit. In order to illustrate the use of the model, a list of activities was developed for a fifth grade unit on the solar system and is included in the Appendix on page 15. The activities are not in sequential order. Please note the activities define what the student will do, not what the teacher will teach.

The second step is to map the activities on a matrix defining the content areas and processes or skills to be included in the unit.

Content / Processes or skills	Art	English	Foreign Language	Math	Music	P.E.	Reading	Science	Social Studies	Other	PROCESS OR SKILL ONLY	TOTAL
a. Comprehending												
b. Symbol-making												
c. Communicating												
d. Expressing Oneself												
e. Problem Solving												
f. Logical Reasoning												
g. Forming General Concepts												
OTHER												
CONTENT ONLY												
TOTAL												

Process-Content Matrix

The matrix lists traditional content areas along the horizontal axis and processes on the vertical axis. The seven skills and processes used in this illustration are based on the essentials of education position statement.

ESSENTIALS OF EDUCATION
KEY PROCESSES

Cognitive Processes ..... Complex systems of information processing skills, not merely specific, discrete subskills to be learned by association or rote.

Comprehending ..... The process by which people make meanings from or understand various stimuli, verbal and nonverbal. *(analyzing, synthesizing, and evaluating)*

Symbol-making ..... The process by which people invent or adopt a code to represent reality or one's perception or imagination. *(alphabetic system, axiomatic structure of arithmetic, map, game rules, musical scores, dance, drama)*

Communicating ..... The process by which people inform others of their thoughts, feelings, and impressions. *(composing, constructing, dramatizing, drawing)*

Expressing Oneself ..... The process by which people give an outlet to their thoughts, feelings, and impressions. *(storytelling, music, art, dance, drama)*

Problem Solving ..... The process by which people deal with a situation or a set of questions that they might have about themselves or their world. *(clarifying, hypothesizing, determining strategies, collecting data, summarizing, drawing inferences)*

Logical Reasoning ..... The process by which people follow a common set of procedures to consider an issue or problem. *(inferring by deductive and inductive thinking)*

Forming General Concepts ..... The process by which people abstract ideas from phenomena and specific concepts. *(classifying, generalizing)*

Some activities may be strictly content or strictly process and should be mapped accordingly. Mapping is done by entering the number of the activity in the appropriate square on the matrix followed by the estimated time to complete the activity. To illustrate the mapping step, five activities from the solar system unit will be used:

1. Schedule a planetarium visit to discuss the general characteristics of the solar system.

5. Listen to selections from *The Planets* by Holst.

6. Write a paragraph expressing why a particular selection does or does not project a feeling identified with a particular planet.

31. Research the mythological names of the planets used by different cultures.

32. Research the meaning of the symbols of the planets.

Activities are mapped by their assigned number. The 60-minute planetarium presentation (Activity 1) maps onto the matrix as science with comprehending and conceptualizing skills. Researching myths (Activity 31) and symbols (Activity 32) take 30 minutes each and are in the area of English with comprehending and conceptualizing skills. Listening to Holst's compositions (Activity 5) is a 30-minute music activity with logical reasoning and conceptualizing skills. The culminating writing activity (Activity 6) is estimated to take 45 minutes and is mapped as English with communicating and expression skills.

Unit Solar System Grade Level 5 Date March 7-11

Content / Processes or skills	Art	English	Foreign Language	Matt	Musi	P.E.	Reading	Science	Social Studies	Other	PROCESS OR SKILL ONLY	TOTAL
a. Comprehending		31 (30) 32 (30)						1 (60)				120
b. Symbol-Making												
c. Communicating		6 (45)										45
d. Expressing Oneself		6 (45)										45
e. Problem Solving												
f. Logical Reasoning					5 (30)							30
g. Forming General Concepts		31 (30) 32 (30)			5 (30)			1 (60)				150
OTHER												
CONTENT ONLY												
TOTAL		210			60			120				

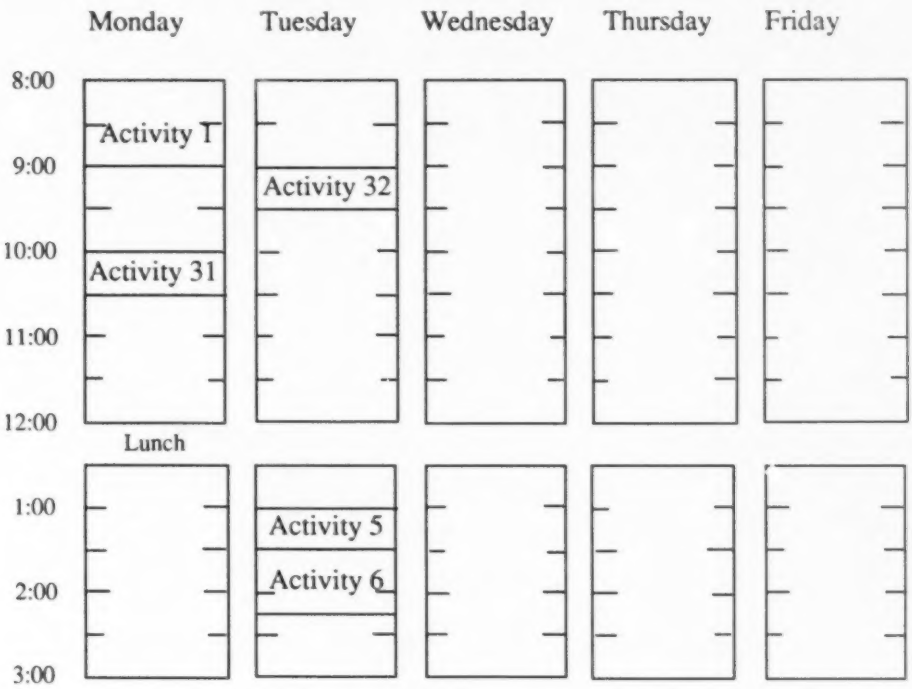
Matrix with Activities Mapped

After the activities have been mapped, the teaching team can assess the balance of time spent in content and process activities. If the same process is emphasized a number of times or no activities present subject matter in a specific content area, adjustments can be made so all areas and all processes are presented during the course of the unit.

The third step is to develop a teaching schedule based on the estimated time for each activity. The teaching day is structured around the activity rather than a pre-arranged bell schedule. It is

at this point that the sequence of activities should be determined. The five solar system activities previously listed have been scheduled on the following form:

Date _____ Unit _____



By organizing activities into a sequence that is more meaningful to students instead of isolating instruction into pre-arranged time blocks, time is more efficiently and effectively utilized.

The fourth step is to calculate the amount of time spent in each discipline area and on each process.

By adding the times listed on the matrix horizontally, it is possible to determine the amount of time spent on each process. By adding the times in the vertical columns, the amount of time spent in each subject area can be calculated.

After the matrix is completely filled out, teachers have specific information on the subject areas covered, the content material taught and the processes practiced. For example, looking at the previous matrix with the five activities mapped, 210 minutes of instruction and practice in English have occurred, 60 minutes in music, and 120 minutes in science; 120 minutes have been spent in developing comprehension skills, 45 minutes in communication skills, 45 minutes in problem-solving skills, 30 minutes in logical reasoning skills, and 150 minutes in forming general concepts...all this in 195 minutes of actual classroom time.

The fifth step is to develop planning sheets for each activity. Good record keeping is essential to the success of the model.

ACTIVITY PLANNING SHEET

Activity **Code**

Teaching Strategies

Evaluation

Resource Materials
- **Media**
- **Materials**
- **Text Reference**

The *Activity* provides the description of the student activity.

The *Code* may consist of the activity number, subject area, process, and the place in the sequence of activities.

Teaching Strategies used during the activity are listed. For example, if the activity is to make a scale model of the solar system, the teaching strategies might include showing an example of a scale model and drawing or brainstorming various ways to complete the task or discussing the use of scale models.

An *Evaluation* process for the activity is defined. Since the emphasis is on process as well as content, teachers must consider alternative forms of evaluation other than paper and pencil testing of information acquired.

Resource materials are listed so they may be gathered prior to the beginning of the activity.

Using a single sheet of paper for each activity rather than the traditional lesson plan or curriculum format allows the flexibility necessary for working with the model. As new teaching strategies are developed or old ones are discarded or additional resource materials become available, changes easily can be made on the activity planning sheets. The sheets can be filed in sequential order and used as daily lesson plans. If the sequence changes or estimates of time to complete an activity have been inaccurate, instant reorganization can occur by simply removing or rearranging the sheets.

The sheets also provide a visual "whole" for the teacher which encourages focus on the activity and what the student is to do rather than on isolated skills or content information.

The Essentials Approach: Pilot Programs

At the present time, over 35 different units based on the Essentials Integrated Curriculum Model have been developed in the states of Colorado and Arizona with the assistance of Dr. Akey and Ms. Gilbert. A list of the units and the schools involved in included in the appendix on page 17. The units range from ones developed by several teachers at one grade level to comprehensive projects involving all teachers in a school.

After implementing the model, teachers, building administrators and the consultants have noted the following characteristics of classrooms involved in integrated education:

- high interest and motivation of students and teachers
- increased attendance
- increased community involvement
- greater participation of students in classroom activities
- greater involvement of students in the learning process
- active rather than passive learners
- acceptance of student responsibility for learning
- more efficient use of time
- better attitudes towards learning and school on the part of students and teachers
- greater interaction and cooperation among students
- development of peer teaching techniques
- more cooperation among participating teachers
- emphasis on the process of learning as well as knowledge acquisition
- practice of higher order thinking skills
- development of lifelong learning skills such as self-responsibility and self-direction, independent study, research and time management skills
- greater variety of teaching strategies

When the Essentials Integrated Curriculum Model is introduced to teachers and principals, they must be encouraged not to implement this model as the entire curriculum but to develop a unit for a one- or two- or three-week period of time. The slow infusion of the concept into the school provides time for first-class models to be developed and an opportunity for reluctant teachers to see a model in action before being asked to participate.

Teachers are encouraged to use traditional activities between units to teach the content needed to successfully complete the next set of activities.

THE ESSENTIALS APPROACH:

An Integrated Curriculum Model for Rethinking the Curriculum of the Future

APPENDIX

APPENDIX A: ESSENTIALS OF EDUCATION STATEMENTS

Society must reaffirm the value of a balanced education

Leaders of several professional organizations reached this conclusion in 1978. They circulated a statement on the essentials of education among a number of professional associations whose governing boards endorsed the statement and urged that it be called to the immediate attention of the entire education community, of policy makers and of the public at large.

The statement that follows embodies the collective concern of the endorsing associations. It expresses their call for a renewed commitment to a more complete and more fulfilling education for all.

The associations invite the support and participation of everyone interested in education.

THE ESSENTIALS OF EDUCATION

Public concern about basic knowledge and the basic skills in education is valid. Society should continually seek out, defines, and then provide for every person those elements of education that are essential to a productive and meaningful life.

The basic elements of knowledge and skill are only a part of the essentials of education. In an era dominated by cries for going "back to the basics," for "minimal competencies," and for "survival skills," society should reject simplistic solutions and declare a commitment to the essentials of education.

A definition of the essentials of education should avoid three easy tendencies: to limit the essentials to "the three R's" in a society that is highly technological and complex; to define the essentials by what is tested at a time when tests are severely limited in what they can measure; and to reduce the essentials to a few "skills" when it is obvious that people use a combination of skills, knowledge, and feelings to come to terms with their world. By rejecting these simplistic tendencies, educators will avoid concentration on training in a few skills at the expense of preparing students for the changing world in which they must live.

Educators should resist pressures to concentrate solely upon easy-to-teach, easy-to-test bits of knowledge, and must go beyond short-term objectives of training for jobs or producing citizens who can perform routine tasks but cannot apply their knowledge or skills, cannot reason about their society, and cannot make informed judgments.

What are the essentials of education?

Educators agree that the overarching goal of education is to develop informed, thinking citizens capable of participating in both domestic and world affairs. The development of such citizens depends not only upon education for citizenship, but also upon other essentials of education shared by all subjects.

Educators agree that the overarching goal of education is to develop informed, thinking citizens capable of participating in both domestic and world affairs.

The interdependence of skills and content is the central concept of the essentials of education. Skills and abilities do not grow in isolation from content. In all subjects, students develop skills in using language and other symbol systems; they develop the ability to reason; they undergo experiences that lead to emotional and social maturity. Students master these skills and abilities through observing, listening, reading, talking, and writing about science, mathematics, history, and the other social sciences, the arts and other aspects of our intellectual, social, and cultural heritage. As they learn about their world and its heritage they necessarily deepen their skills in language and reasoning and acquire the basis for emotional, aesthetic and social growth. They also become aware of the world around them and develop an understanding and appreciation of the interdependence of the many facets of that world.

More specifically, the essentials of education include, among others, the ability to use language, to think, and to communicate effectively; to use mathematical knowledge and methods to solve problems; to reason logically; to use abstractions and symbols with power and ease; to apply and to understand scientific knowledge and methods; to make use of technology and to understand its limitations; to express oneself through the arts and to understand the artistic expressions of others; to understand other languages and cultures; to understand spatial relationships; to apply knowledge about health, nutrition, and physical activity; to acquire the capacity to meet unexpected challenges; to make informed value judgments; to recognize and to use one's full learning potential; and to prepare to go on learning for a lifetime.

All disciplines must join together and acknowledge their interdependence.

Such a definition calls for a realization that all disciplines must join together and acknowledge their interdependence. Determining the essentials of education is a continuing process, far more demanding and significant than listing isolated skills assumed to be basic. Putting the essentials of education into practice requires instructional programs based on this new sense of interdependence.

Educators must also join with many segments of society to specify the essentials of education more fully. Among these segments are legislators, school boards, parents, students, workers' organizations, businesses, publishers, and other groups and individuals with an interest in education. All must now participate in a coordinated effort on behalf of society to confront this task. Everyone has a stake in the essentials of education.

ORGANIZATIONS FOR THE ESSENTIALS OF EDUCATION

American Alliance for Health, Physical Education, Recreation and Dance
American Council on the Teaching of Foreign Languages
American Theater Association
Arts, Education and Americas, Inc.
Association for Educational Communications and Technology
Association for Supervision and Curriculum Development
Association of American Publishers, Inc.
Council for Basic Education
Home Economics Education Association
International Reading Association
Modern Language Association
Music Educators National Conference
National Art Education Association
National Association of Elementary School Principals
National Association of Secondary School Principals
National Business Education Association
National Council for the Social Studies
National Council of Teachers of English
National Council of Teachers of Mathematics
National Education Association
National Science Teachers Association
Speech Communication Association

APPENDIX B: Activities for Solar System Unit

Activities for the Solar System Unit

1. Schedule a planetarium visit to discuss the general characteristics of the solar system.
2. Develop a scale model of the planets' sizes.
3. Develop a scale model of the planets' distances from the sun.
4. Write a paragraph discussing the difficulty of making a good model of the solar system when both the distance and size are included in the same model.
5. Listen to selections from *The Planets* by Holst.
6. Write a paragraph expressing why this selection does or does not project a feeling for a particular planet.
7. Research selected track event records on earth.
8. Using the gravity of different planets transpose the track records on each to other planets.
9. Plan a "Martian Olympics" where individual skills in each track event are calculated.
10. Using individual track performances on earth, calculate the performance in terms of other planets with different gravities.
11. Establish a model government for inhabiting another planet.
12. The "last" space ship is leaving earth for an unknown planet and space is limited. Discuss and decide which individuals or professions will make the trip.
13. Using present age, calculate age if students lived on different planets.
14. Calculate how many of each planet it would take to cross the face of the sun.
15. Calculate the number of each different planet it would take to fill the sun or Jupiter.
16. Read the section of Gulliver's Travels related to astronomy and the moons of Mars.
17. If Gulliver's Travels was written 150 years before the discovery of Mars' moons, write a paragraph about how the author could have included this information in the book.
18. Research physical conditions on the various planets.
19. Paint a landscape of a selected planet.
20. Construct paper-mache models of a selected planet.
21. Paint each planet using information from the research.
22. Photograph planets against the star field on several successive evenings.
23. Research the root of the word, "planet."
24. Photograph one of the outer planets against the star field when it is in retrograde motion.
25. Research the stars of constellation where the planet is located.
26. Draw or paint imaginary pictures to fit the stars in the constellation.

27. Design a myth for an imaginary constellation.

28. Research and draw the "accepted" constellation where the planet is located.

29. Research the "accepted" mythology of the constellation.

30. Paint the drawings of the constellations.

31. Research the mythological names of the planets used by different cultures.

32. Research the meaning of the symbols of the planets.

33. Write original poems for the different planets.

34. Find poems written for different planets by published authors.

35. Write a paragraph comparing and contrasting poems by several authors about a planet.

36. Determine if the poems are scientifically correct.

37. Research the use of the names of the planets in establishing the names of the days of the week.

38. Research how the planets were used in establishing the order for the names of the week.

39. Research the Spanish, French, and Teutonic names of the planets and/or Gods and relate to the names of the days of the week.

40. Using Greek mythology, research the family relationships of all planets.

41. Develop a family tree using the Greek and/or Roman mythology clues.

42. Make a mobile of the planets or of a planet and its moons.

43. Read science fiction related to the individual planets.

44. Write short, original science fiction stories about selected planets based on what is know about the planet.

APPENDIX C: UNITS DEVELOPED USING THE ESSENTIALS INTEGRATED CURRICULUM MODEL

Units Developed Using the Essentials of Education Integrated Curriculum Model

Grade Level	Unit
Kindergarten	Plants (2 separate units)
1st	Dinosaurs Five Senses Space
2nd	*Colorado History Flag Day Space
3rd	Constellations Biospheres *Earth, Rocks and Minerals Animals Space
4th	Colorado History Futures *Pioneers Space
5th	Civil War Bees Space
6th	*EcoWeek Middle Ages *Human Head Space (2 separate units)
7th	Pond Study Space
8th	Population
9th	*Earth Science

Grade Level	Unit
1-3	Zoo Animals
1-2	Bears
K-6	Time
K-7	A two-week articulated space curriculum with complementary activities for "special" teachers - music, art, physical education, computers, and library.
7-12	Revolutionary War
10-12	Nutrition

*Completed units available for purchase

All of the units reached the "teach-able" stage. Only six units have been developed to the point that we consider them "share-able."

For information on ordering copies of "share-able" units or assistance with implementation of the model, contact Dr. John Akley, 2410 Warwick Lane, Colorado Springs, CO 80909. 719/596-7536

APPENDIX D: The Developers of the Essentials Integrated Curriculum Model

Dr. John Akey has 35 years experience as an educator, Grades 2 through high school, with 21 years experience working with inservice for teachers and other adult activities. He is a past president of the National Science Teachers Association and the Colorado Association of Science Teachers. On special assignment from the Colorado Springs, Colorado, public schools, he served as the science consultant to the Colorado Department of Education and Director of Education to the U.S. Space Foundation. As a free-lance educational consultant, he is pursuing interests in curriculum development and instructional improvement. Currently, he is teaching courses for a number of colleges and works with individual school districts as a consultant in interdisciplinary curriculum models and science education.

Judith C. Gilbert is presently a senior consultant with the School Effectiveness Unit at the Colorado Department of Education. Mrs. Gilbert is a former English, speech and drama teacher. She is most interested in instructional improvement and works with teachers throughout the state in this endeavor. She shares responsibility for the state-wide writing assessment program and is working on a resource book of alternative means of assessment. She edited a resource guide for interdisciplinary education and is a contributing author to the ASCD publication, Interdisciplinary Curriculum: Design and Implementation. She is Director of the Colorado Writing Project, a past president of the Colorado Language Arts Society and serves on the executive board of the Colorado Association of Supervision and Curriculum Development as well as a number of committees and commissions for the National Council of Teachers of English.